

FIG. 1

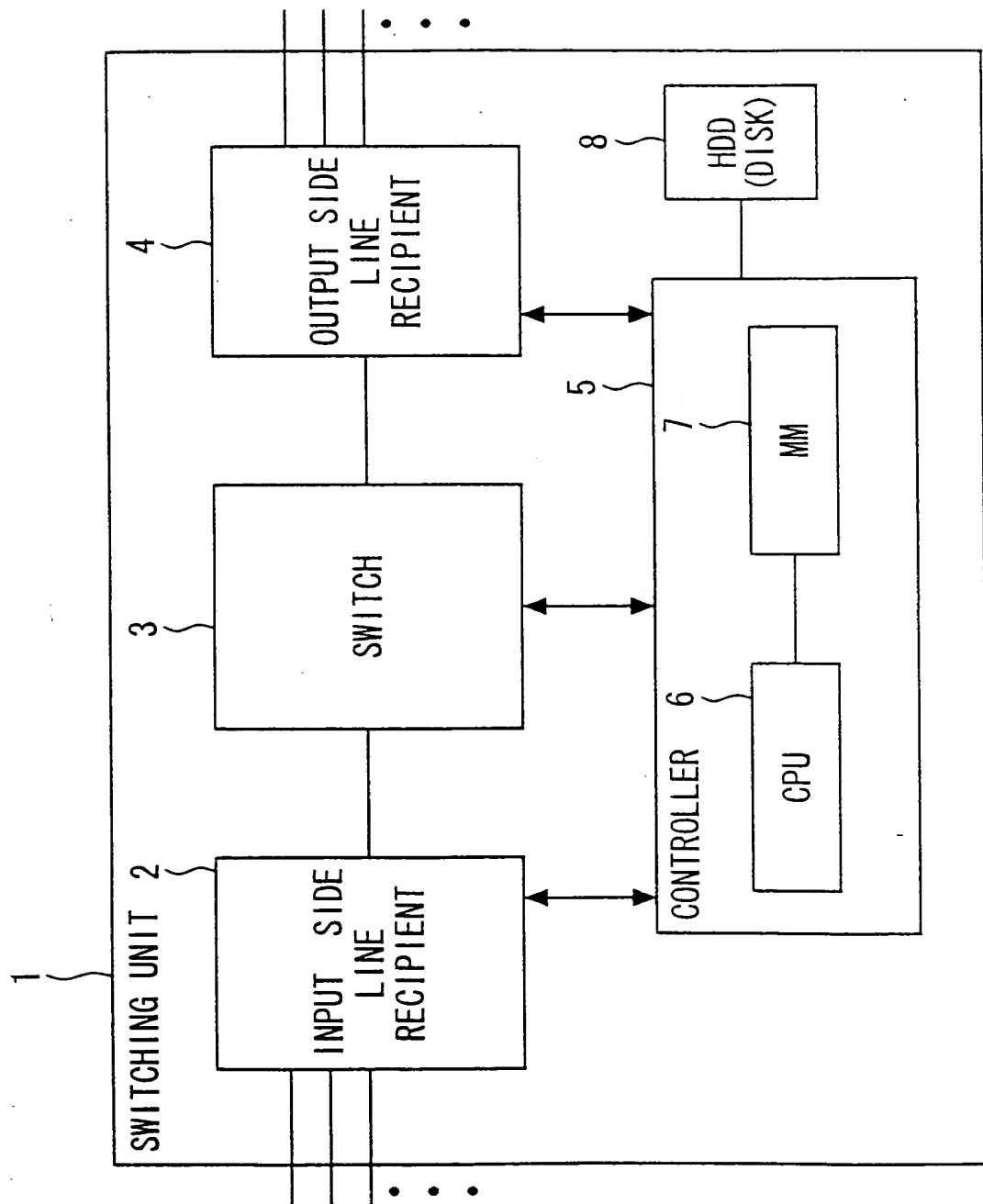


FIG. 2

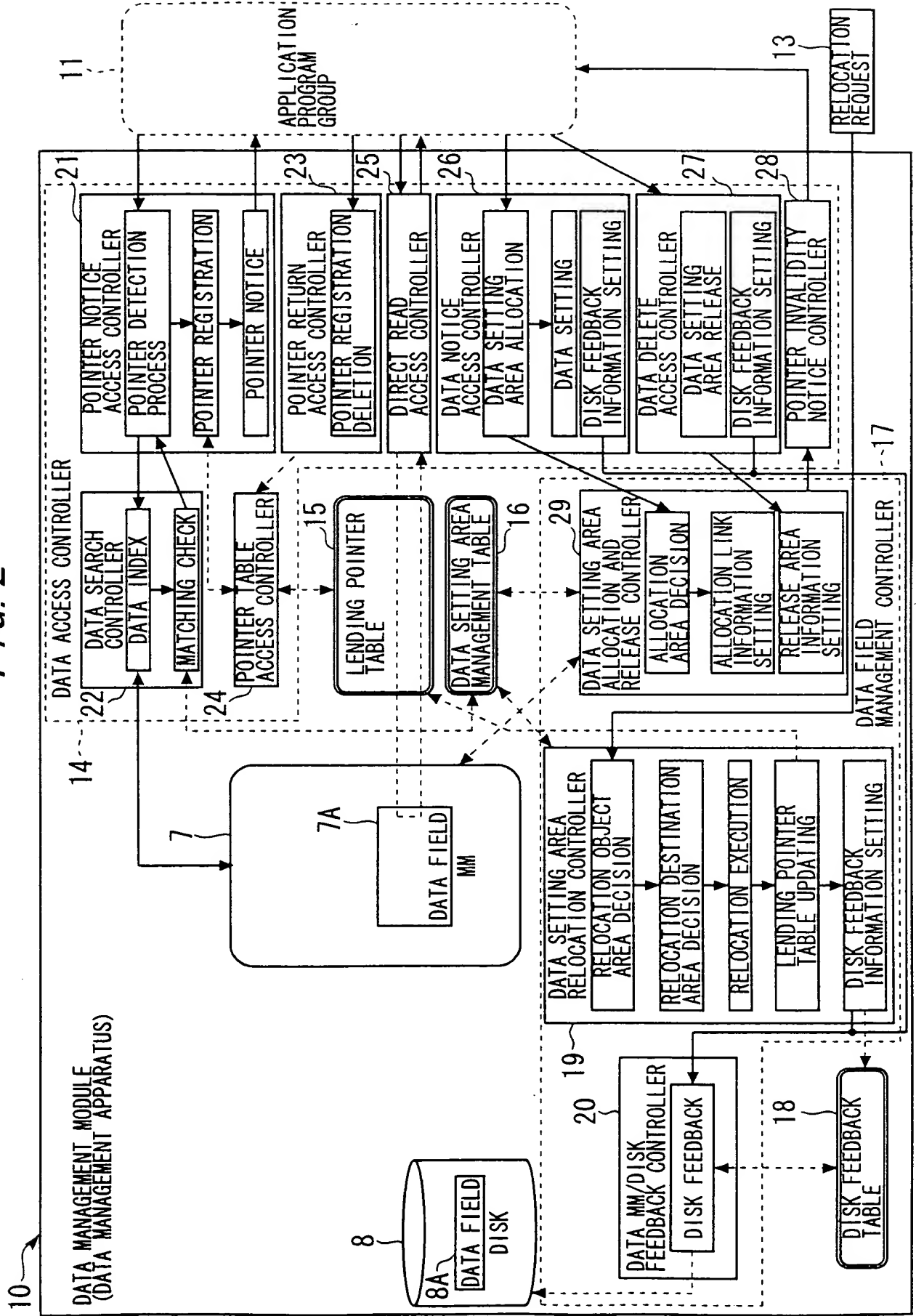


FIG. 3

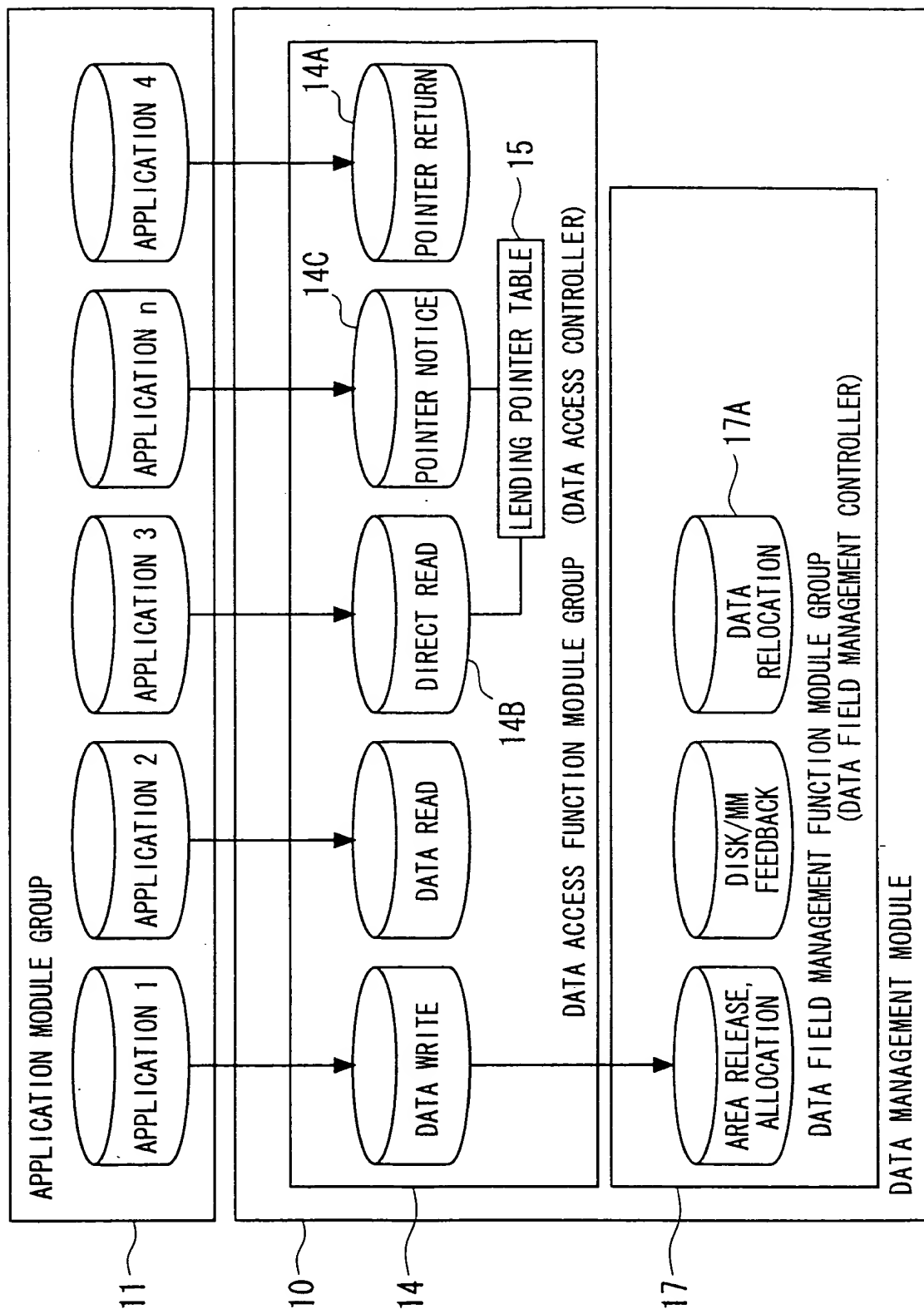


FIG. 4A

LENDING POINTER TABLE

RECORD ADDRESS	DATA FIELD POINTER	DATA STORAGE AREA SIZE	APPLICATION ENTRY ADDRESS	STATUS OF USE (USE CONDITION)
tbl-1	adr_1	size-2	apl-1	NOT USED
tbl-2	adr_2	size-3	apl-2	BEING READ
tbl-3	adr_3	size-1	apl-3	NOT USED

M PIECES OF
POINTER RECORD

15

FIG. 4B

7A(8A)

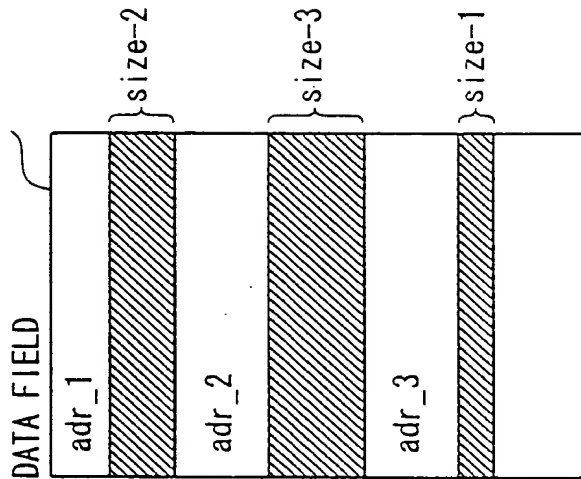


FIG. 5

16

DATA SETTING AREA MANAGEMENT TABLE

STATUS OF USE OF ENTIRE DATA FIELD		BEGINNING ADDRESS OF ALLOCATION AND RELEASE FIELD	FINAL (ENDING) ADDRESS OF FIXED FIELD
SIZE OF USE	EMPTY SIZE		
n	m	adr_free	adr_fix
} SIZE OF USE AND EMPTY SIZE OF ENTIRE DATA FIELD			
MINIMUM ADDRESS OF EACH SIZE OF CONTINUOUS EMPTY AREAS		ALLOCATION AND RELEASE OCCURRENCE FREQUENCY STATISTIC DATA	
SIZE	MINIMUM ADDRESS		
size 1	adr_4	n TIMES	
size 2	adr_m	0 TIME	
.	.		
size 3	adr_n	m TIMES	
} CONTINUOUS SIZE OF UNUSED DATA SETTING AREA, ITS MIN. ADDRESS, AND ALLOCATION OR RELEASE OCCURRENCE FREQUENCY OF EACH SIZE			
STATUS OF USE (USE CONDITION) IN EACH DATA SETTING AREA		LINK INFORMATION BETWEEN DATA SETTING AREAS	RELOCATION STATUS
ADDRESS	STATUS OF USE		
adr_1	BEING USED		
adr_2	BEING USED	ADR_1 CONTINUOUS	
adr_3	BEING USED	adr_p-2	
adr_4	EMPTY		
adr_5	EMPTY		
adr_6	BEING USED	adr_p-1	
adr_7	BEING USED	adr_6 CONTINUOUS	
adr_8	BEING USED		adr_4
:	:		
adr_x	BEING USED	adr_p-3	

STATUS OF USE AND STATUS OF RELOCATION
PROCESS ARE MANAGED IN EVERY SIZE OF DATA
SETTING AREA IN THE ENTIRE DATA FIELD.

* DATA SETTING AREA IS THE MIN. UNIT
OF ALLOCATION AND RELEASE FOR SETTING
DATA BY DIVIDING THE ENTIRE DATA FIELD BY
A SPECIFIC SIZE.

FIG. 6A

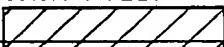

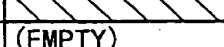
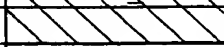
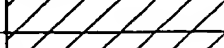
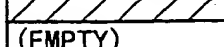





DATA SETTING AREA MANAGEMENT TABLE

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STATUS OF USE OF ENTIRE DATA FIELD		BEGINNING ADDRESS OF ALLOCATION AND RELEASE FIELD	FINAL (ENDING) ADDRESS OF FIXED FIELD
SIZE OF USE	EMPTY SIZE		
n	m	adr_11	adr_n-5
MINIMUM ADDRESS OF EACH SIZE OF CONTINUOUS EMPTY AREAS		ALLOCATION AND RELEASE OCCURRENCE FREQUENCY STATISTIC DATA	
SIZE	MINIMUM ADDRESS		
1	adr_8	1 TIME	
2	adr_4	2 TIMES	
STATUS OF USE (USE CONDITION) IN EACH DATA SETTING AREA		LINK INFORMATION BETWEEN DATA SETTING AREAS	RELOCATION STATUS (RELOCATION CONDITION)
ADDRESS	STATUS OF USE		
adr_1	BEING USED		
adr_2	BEING USED	adr_1 CONTINUOUS	
adr_3	BEING USED		
adr_4	EMPTY		
adr_5	EMPTY		
adr_6	BEING USED	adr_1	
adr_7	BEING USED	adr_6 CONTINUOUS	
adr_8	EMPTY		
:	:		
adr_n	BEING USED	adr_9	

FIG. 6B

COMPOSITION OF DATA FIELD

ADDRESS	DATA FIELD
adr_1	
adr_2	
adr_3	
adr_4	(EMPTY)
adr_5	(EMPTY)
adr_6	<adr_1>
adr_7	
adr_8	(EMPTY)
adr_9	
adr_10	
adr_11	(EMPTY)
:	(EMPTY)
adr_n-5	(EMPTY)
adr_n-4	
adr_n-3	
adr_n-2	
adr_n-1	
adr_n	

LEGEND

ONE DATA SETTING AREA

~~DATA STORAGE AREA (BEING USED)~~

<LINK DESTINATION ADDRESS>

FIG. 7

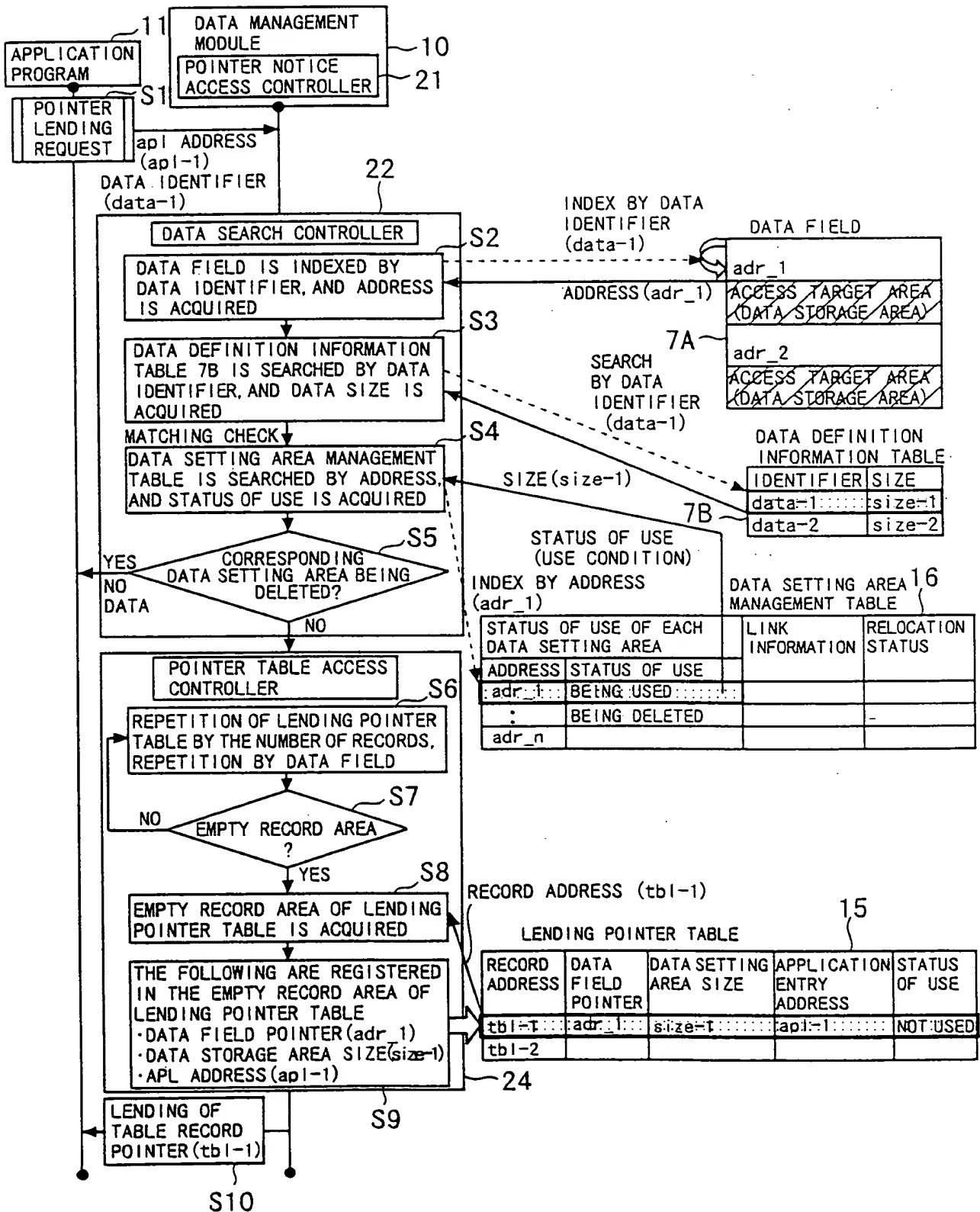


FIG. 8

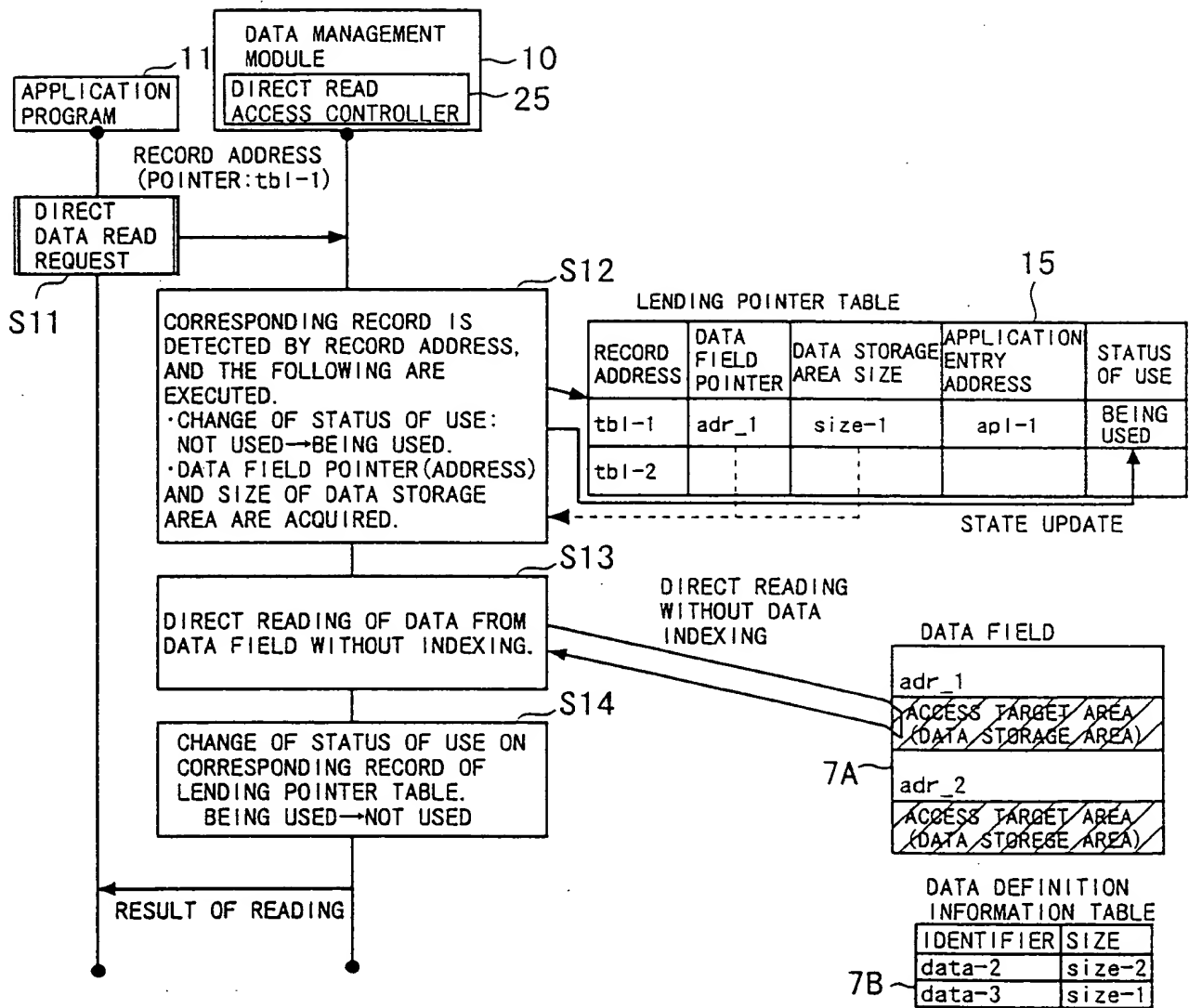


FIG. 9

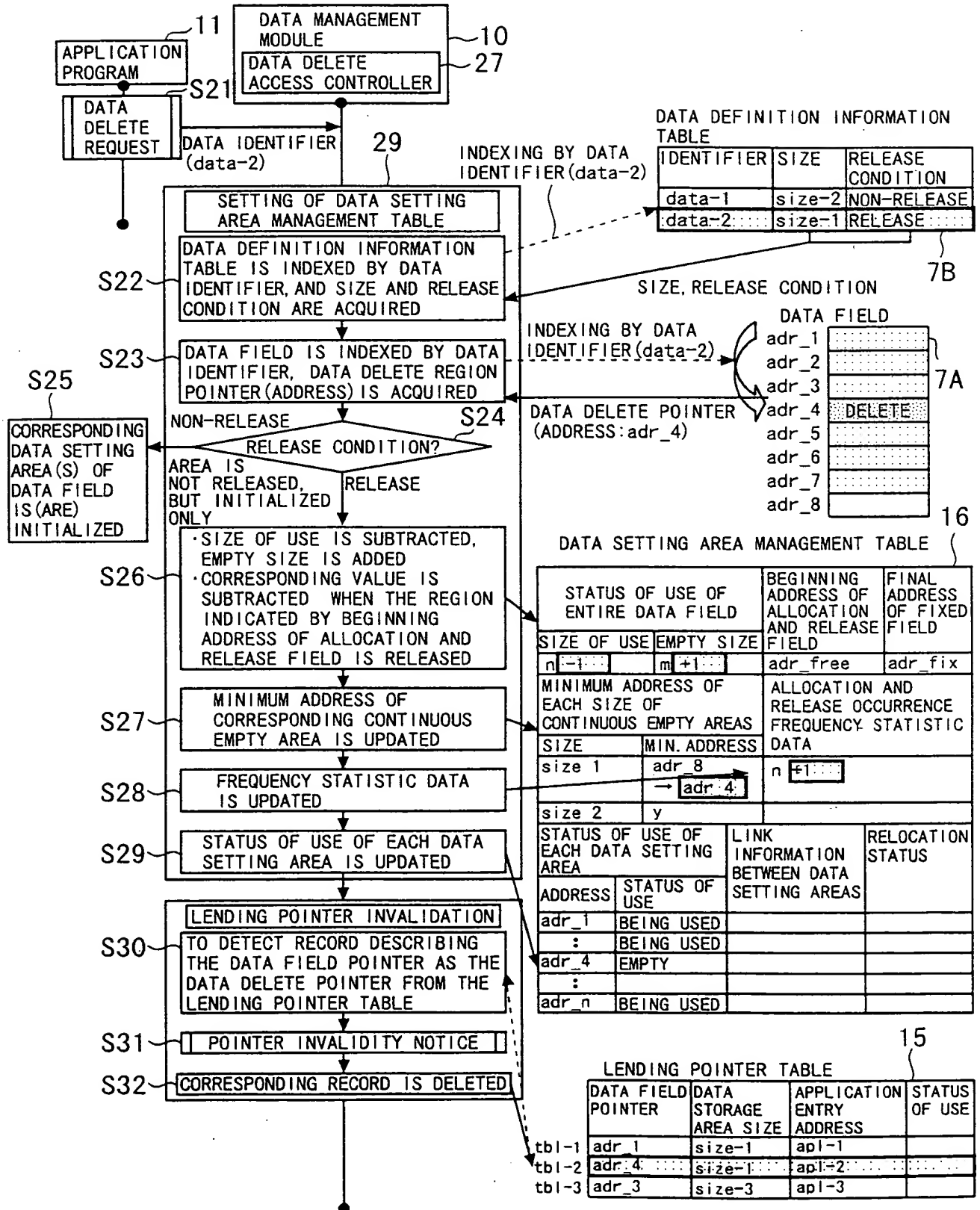


FIG. 10A

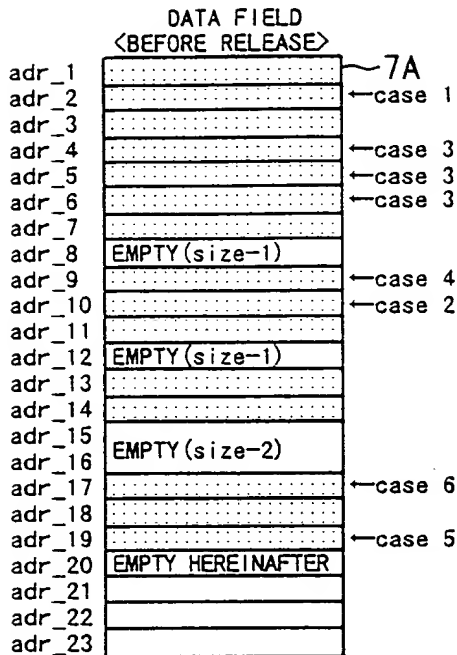


FIG. 10B

16

DATA SETTING AREA MANAGEMENT TABLE <BEFORE RELEASE>			
STATUS OF USE OF ENTIRE DATA FIELD		BEGINNING ADDRESS OF ALLOCATION AND RELEASE FIELD	FINAL ADDRESS OF FIXED FIELD
SIZE OF USE	EMPTY SIZE		
n	m	adr_20	adr_fix
MINIMUM ADDRESS OF EACH SIZE OF CONTINUOUS EMPTY AREAS		ALLOCATION AND RELEASE OCCURRENCE FREQUENCY STATISTIC DATA	
SIZE	MIN. ADDRESS		
size 1	adr_8		
size 2	adr_15		
STATUS OF USE OF EACH DATA SETTING AREA		LINK INFORMATION BETWEEN AREAS	RELOCATION STATUS
ADDRESS	STATUS OF USE		

CHANGED AS FOLLOWS
DEPENDING ON CASES
1 TO 6

FIG. 10C

CASE No.	STATE	RELEASE OBJECT AREA (DATA STORAGE AREA THAT IS RELEASED)		MINIMUM ADDRESS OF EACH SIZE OF CONTINUOUS EMPTY AREAS (CHANGE CONTENT)		BEGINNING ADDRESS OF ALLOCATION AND RELEASE FIELD
		ADDRESS	SIZE	SIZE	MIN. ADDRESS	
0	INITIAL STATE			size-1	adr_8	adr_20
				size-2	adr_15	
1	TO RELEASE ADDRESS OBJECT AREA SMALLER THAN MINIMUM ADDRESS	adr_2	size-1	size-1	adr_2 (CHANGED)	
2	TO RELEASE RELEASE OBJECT AREA LARGER THAN MINIMUM ADDRESS	adr_10	size-1			
3	TO RELEASE RELEASE OBJECT AREA OF SIZE NOT FOUND IN DATA SETTING AREA MANAGEMENT TABLE	adr_4	size-3	size-3	adr_4 (ADDED)	
4	TO RELEASE RELEASE OBJECT AREA ADJACENT TO EXISTING EMPTY AREA (WHEN MINIMUM ADDRESS OF EXISTING CONTINUOUS EMPTY AREA SIZE IS CHANGED)	adr_9	size-1	size-1	adr_12 (CHANGED)	
				size-2	adr_8 (CHANGED)	
5	TO RELEASE FINAL RELEASE OBJECT AREA	adr_19	size-1			adr_19 (CHANGED)
6	TO RELEASE RELEASE OBJECT AREA ADJACENT TO EXISTING EMPTY AREA (WHEN EXISTING CONTINUOUS EMPTY AREA SIZE IS DELETED OR ADDED)	adr_17	size-1	size-2	DELETED	
				size-3	adr_15 (ADDED)	

EMPTY COLUMN SHOWS "NO CHANGE"

005250 " 5658960

FIG. 11

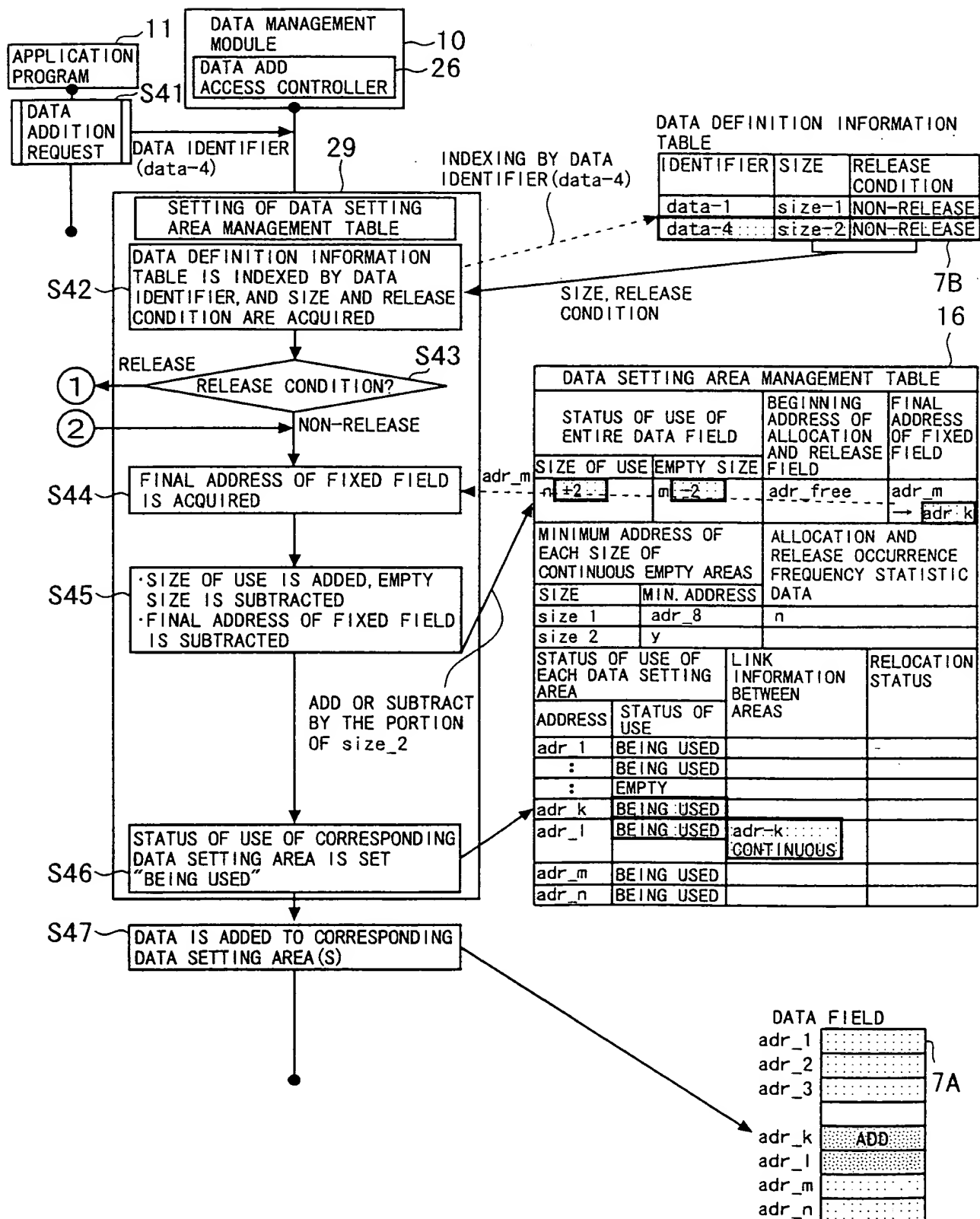


FIG. 12

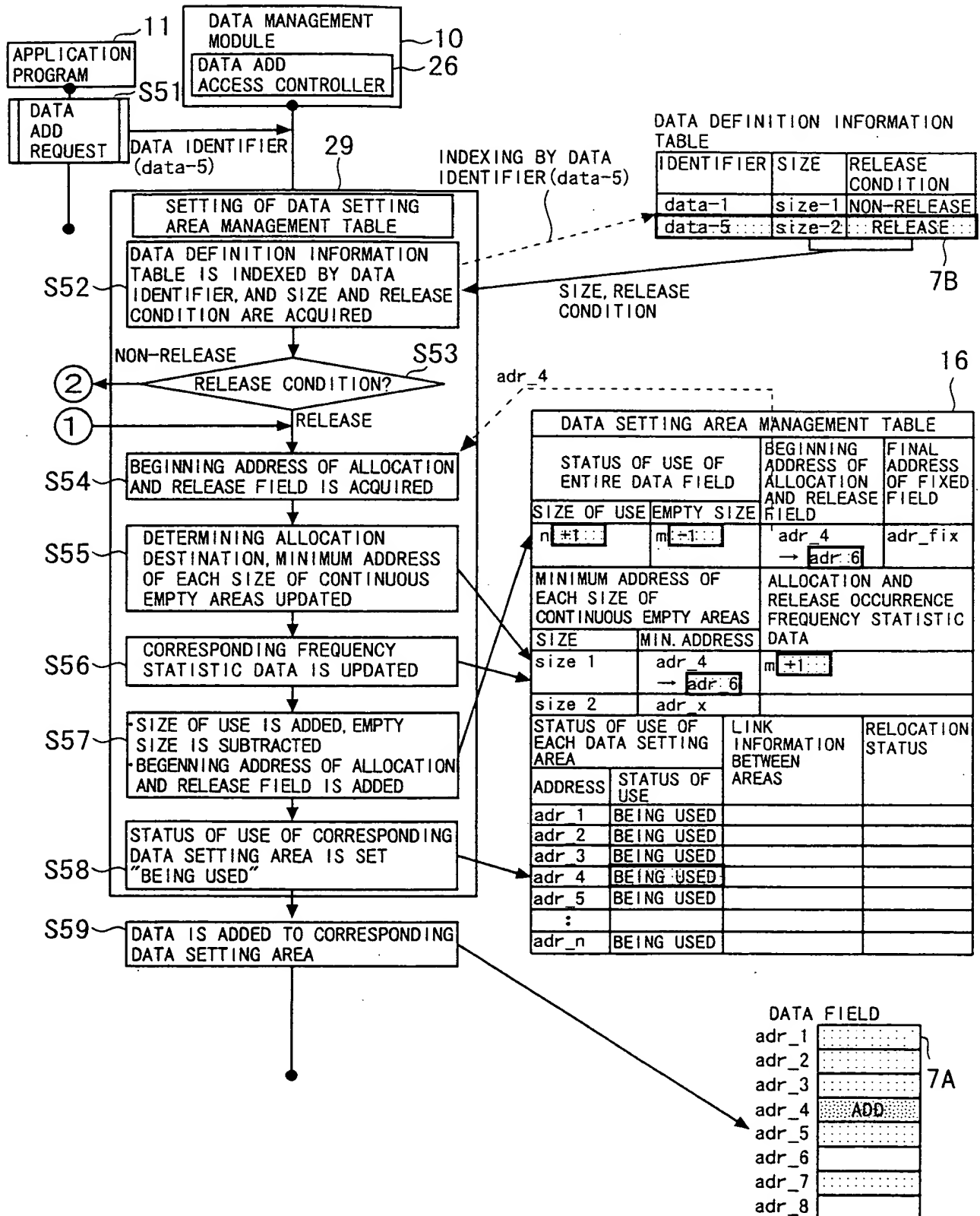


FIG. 13A

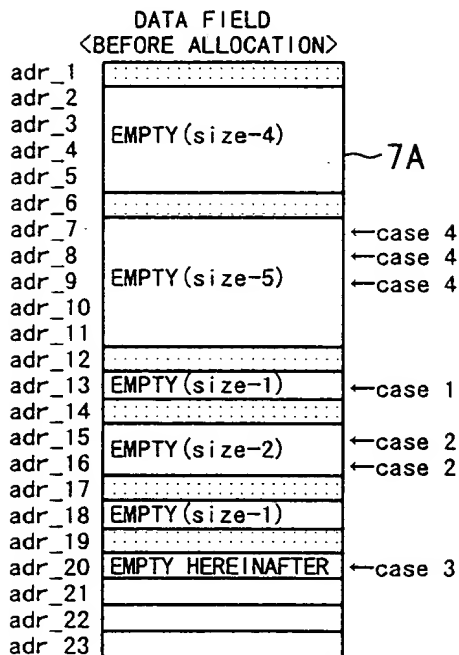


FIG. 13B

16

DATA SETTING AREA MANAGEMENT TABLE <BEFORE ALLOCATION>			
STATUS OF USE OF ENTIRE DATA FIELD		BEGINNING ADDRESS OF ALLOCATION AND RELEASE FIELD	FINAL ADDRESS OF FIXED FIELD
SIZE OF USE	EMPTY SIZE		
n	m	adr_20	adr_fix
MINIMUM ADDRESS OF EACH SIZE OF CONTINUOUS EMPTY AREAS		ALLOCATION AND RELEASE OCCURRENCE FREQUENCY STATISTIC DATA	
SIZE	MIN. ADDRESS		
size 1	adr_13	10	
size 2	adr_15	20	
size 4	adr_2	2	
size 5	adr_7	2	
STATUS OF USE OF EACH DATA SETTING AREA		LINK INFORMATION BETWEEN AREAS	RELOCATION STATUS
ADDRESS	STATUS OF USE		

CHANGED AS FOLLOWS
DEPENDING ON CASES
1 TO 4

FIG. 13C

CASE No.	STATE	ALLOCATION TARGET AREA (DATA STORAGE AREA FOR ALLOCATING DATA)		MINIMUM ADDRESS OF EACH SIZE OF CONTINUOUS EMPTY AREAS (CHANGE CONTENT)		BEGINNING ADDRESS OF ALLOCATION AND RELEASE FIELD
		ADDRESS	SIZE	SIZE	MIN. ADDRESS	
0	INITIAL STATE			size-1	adr_13	adr_20
				size-2	adr_15	
				size-4	adr_2	
				size-5	adr_7	
1	ALLOCATION AT MIN. ADDRESS POSITION	adr_13	size-1	size-1	adr_18 (CHANGED)	
2	ALLOCATION AT MIN. ADDRESS POSITION	adr_15	size-2	size-2	(DELETED)	
3	ALLOCATION OF DATA HAVING LARGER SIZE THAN SIZE OF CONTINUOUS EMPTY AREAS IN DATA FIELD	adr_20	size-7	size-7	adr_20 (ADDED)	adr_27 (CHANGED)
4	ALLOCATION OF DATA HAVING SIZE "NOT FOUND CONTINUOUS EMPTY AREA HAVING SAME SIZE IN DATA FIELD" AND "SMALLER THAN SIZE OF CONTINUOUS EMPTY AREAS IN DATA FIELD" (*)	adr_7	size-3	size-3	adr_7 (ADDED)	
				size-2	adr_10 (CHANGED)	
				adr_5	(DELETED)	

EMPTY COLUMN SHOWS NO CHANGE

*THE AREA OF SIZE-3 CAN BE ALLOCATED BOTH FROM ADR_2 OF SIZE-4 AND FROM ADR_7 OF SIZE-5 WHEN ALLOCATED IN SIZE-4 : NEW EMPTY REGION SIZE IS SIZE-1
WHEN ALLOCATED IN SIZE-5 : NEW EMPTY REGION SIZE IS SIZE-2
HEREIN, ACCORDING TO THE VALUE IN THE "FREQUENCY STATISTIC DATA", SINCE THE NUMBER OF TIMES OF SIZE-1 < NUMBER OF TIMES OF SIZE-2, IT IS KNOWN MORE EFFECTIVE TO UTILIZE THE DATA FIELD BY OBTAINING SIZE-2, AND IT IS ALLOCATED IN ADR_7

FIG. 14

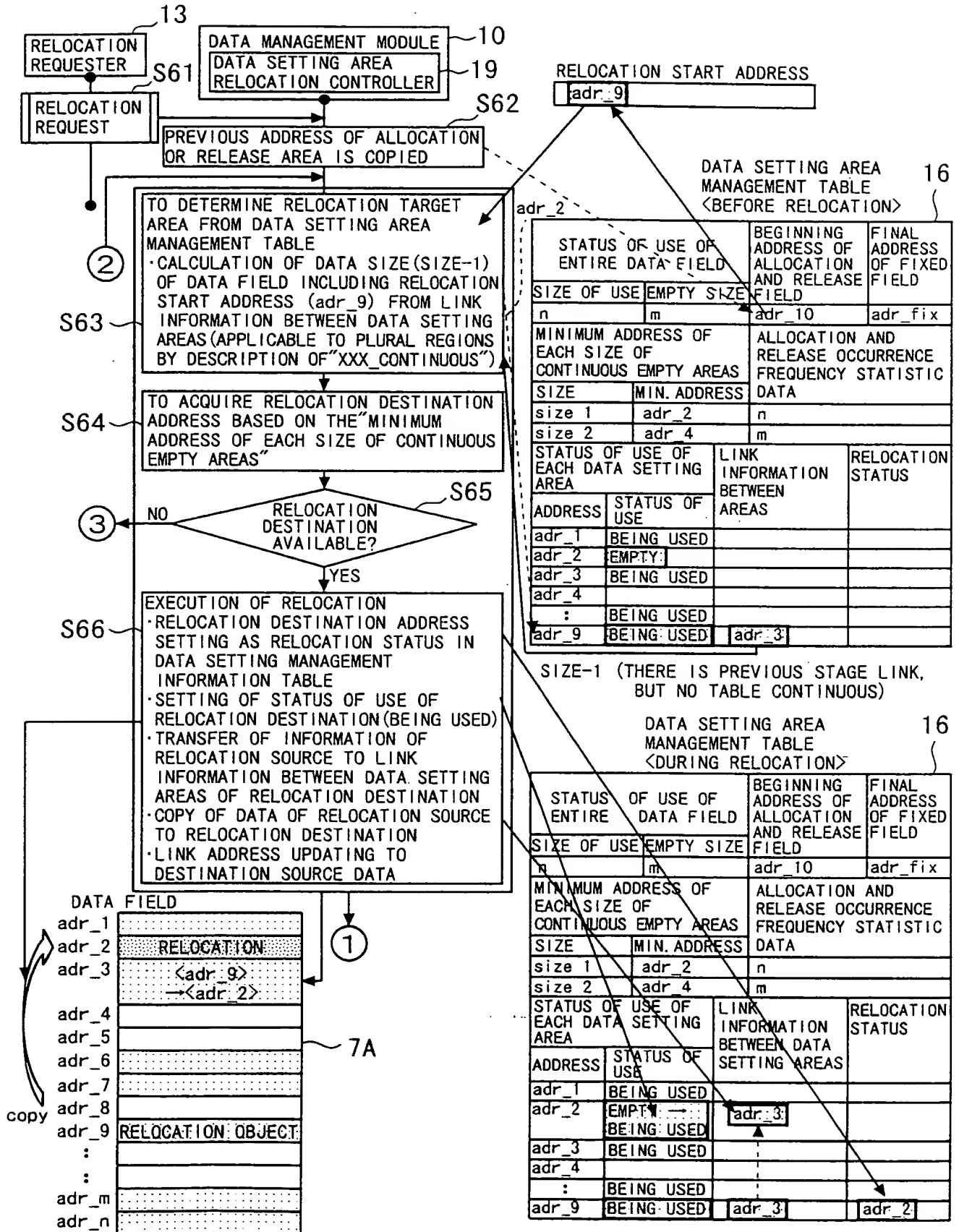


FIG. 15

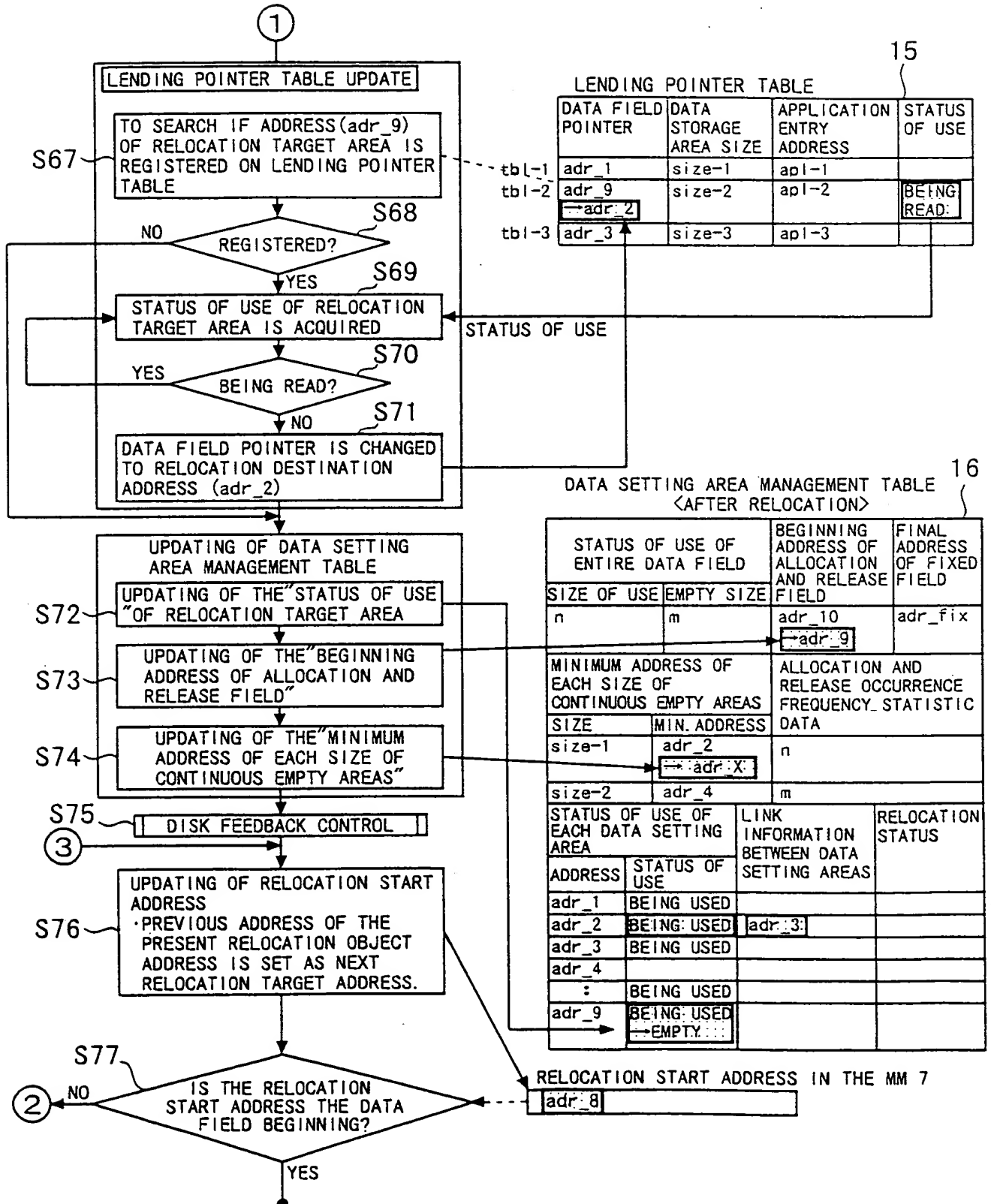
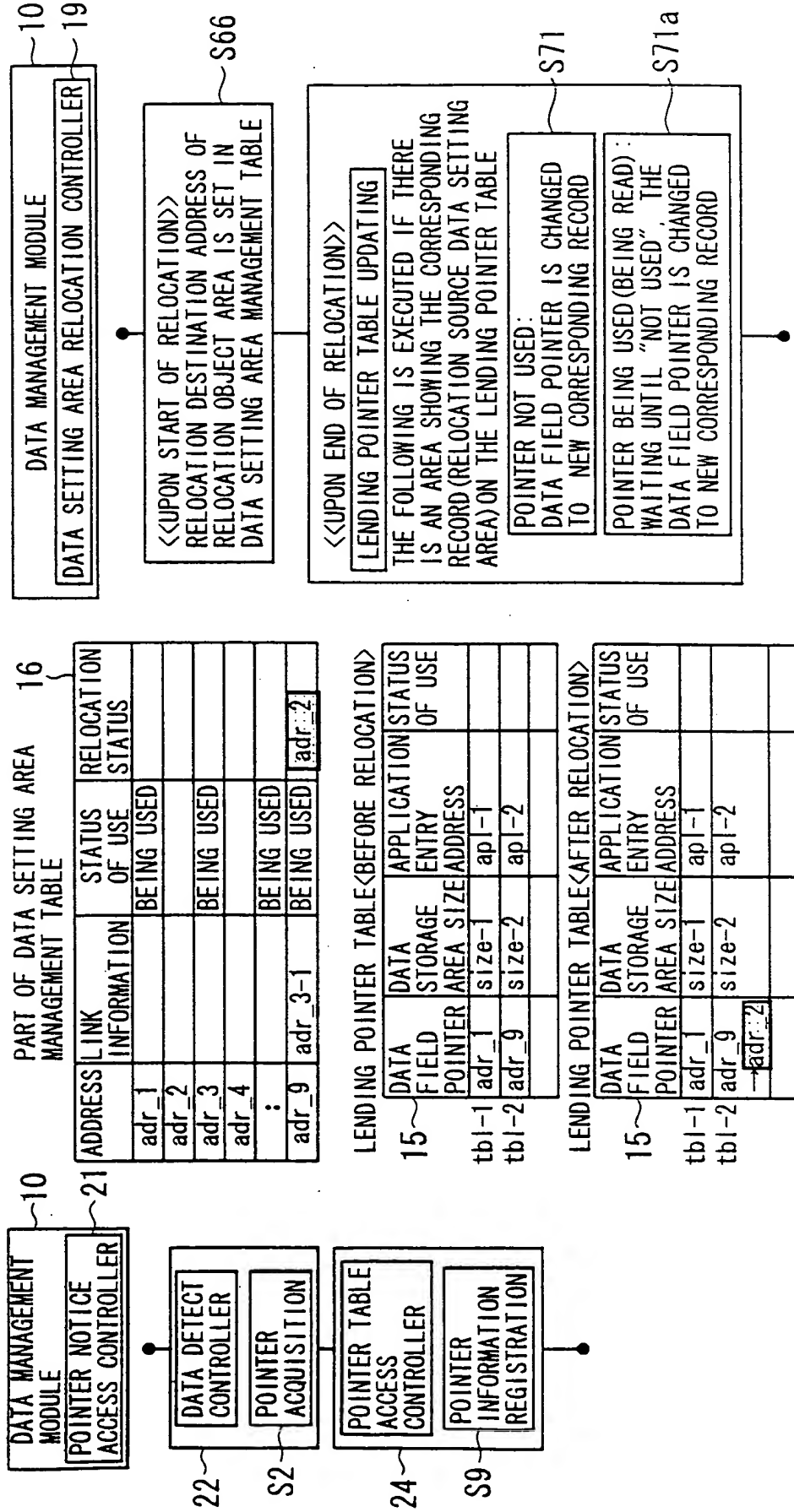


FIG. 16



THE OPERATION OF THE POINTER NOTICE ACCESS CONTROLLER DOES NOT DEPEND WHETHER THE RELOCATION IS BEING EXECUTED OR NOT. THE LENDING POINTER TABLE RELATING TO THE CORRESPONDING DATA FIELD UPON POINTER NOTICE REQUEST IS ALWAYS GENERATED, AND ITS RECORD ACCESS IS NOTICED TO THE APPLICATION PROGRAM.

WHEN FEEDING BACK THE RESULT OF RELOCATION TO THE LENDING POINTER TABLE BY THE RELOCATION CONTROLLER, DEPENDING ON WHETHER THE LENT RECORD ACCESS IS BEING USED OR NOT, THE RELOCATION CONTROLLER OPERATES TO MATCH.

FIG. 17

LENDING POINTER TABLE

RECORD ADDRESS	DATA FIELD POINTER	DATA STORAGE AREA SIZE	APPLICATION ENTRY ADDRESS	STATUS OF USE
tbl-1	adr_1	50	apl-1	
tbl-2	adr_3	100	apl-2	
tbl-3	adr_4	200	apl-3	
tbl-4	adr_2	100	apl-4	

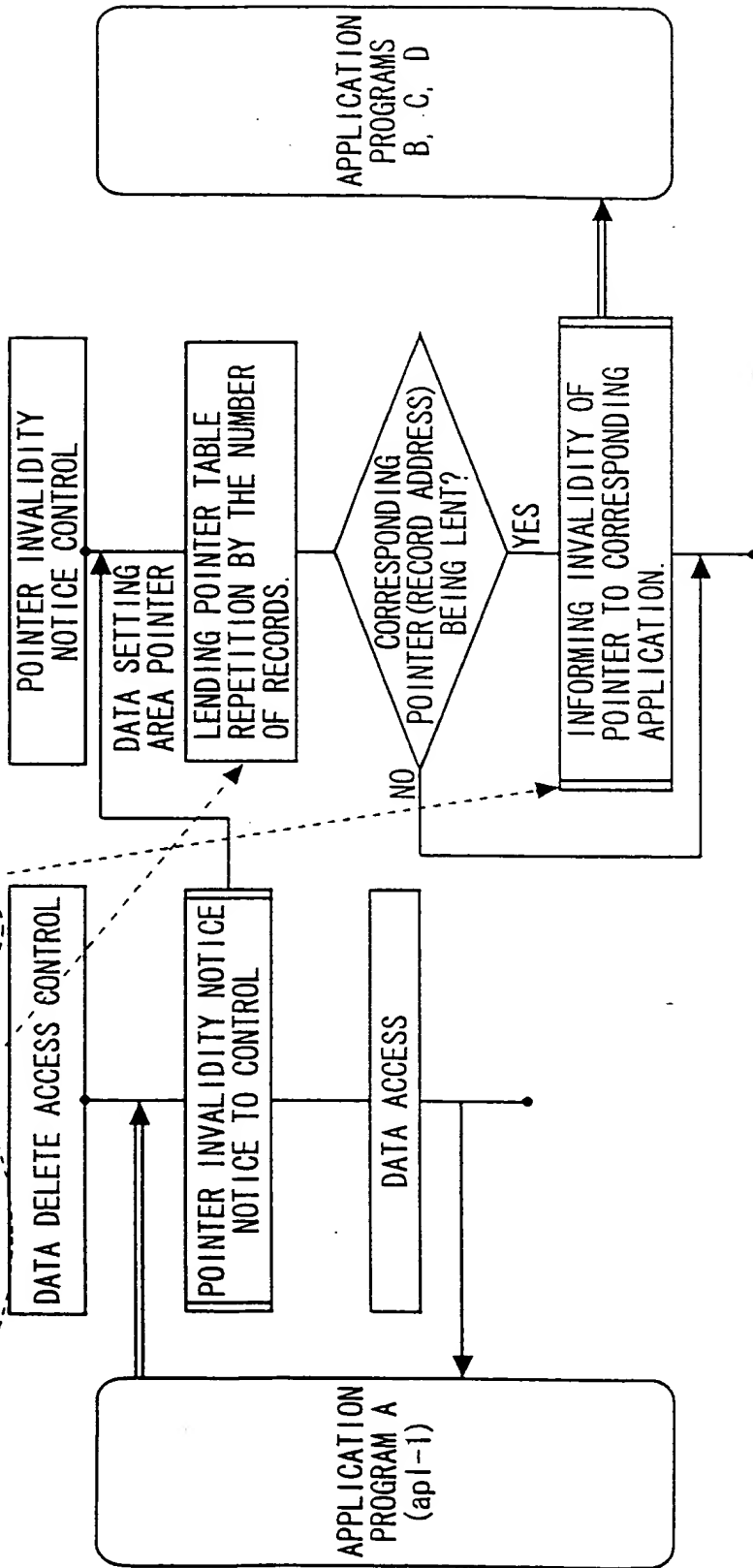


FIG. 18

PRIOR ART

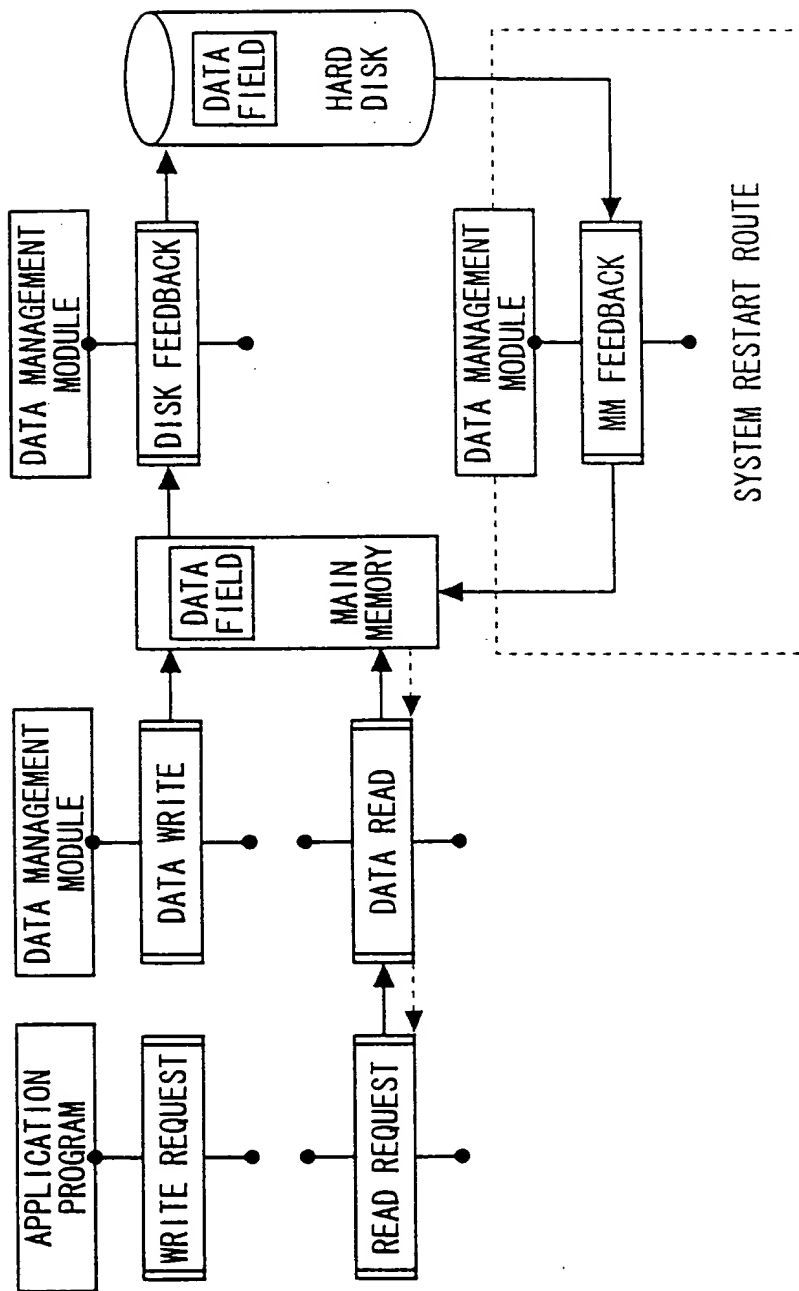


FIG. 19

PRIOR ART

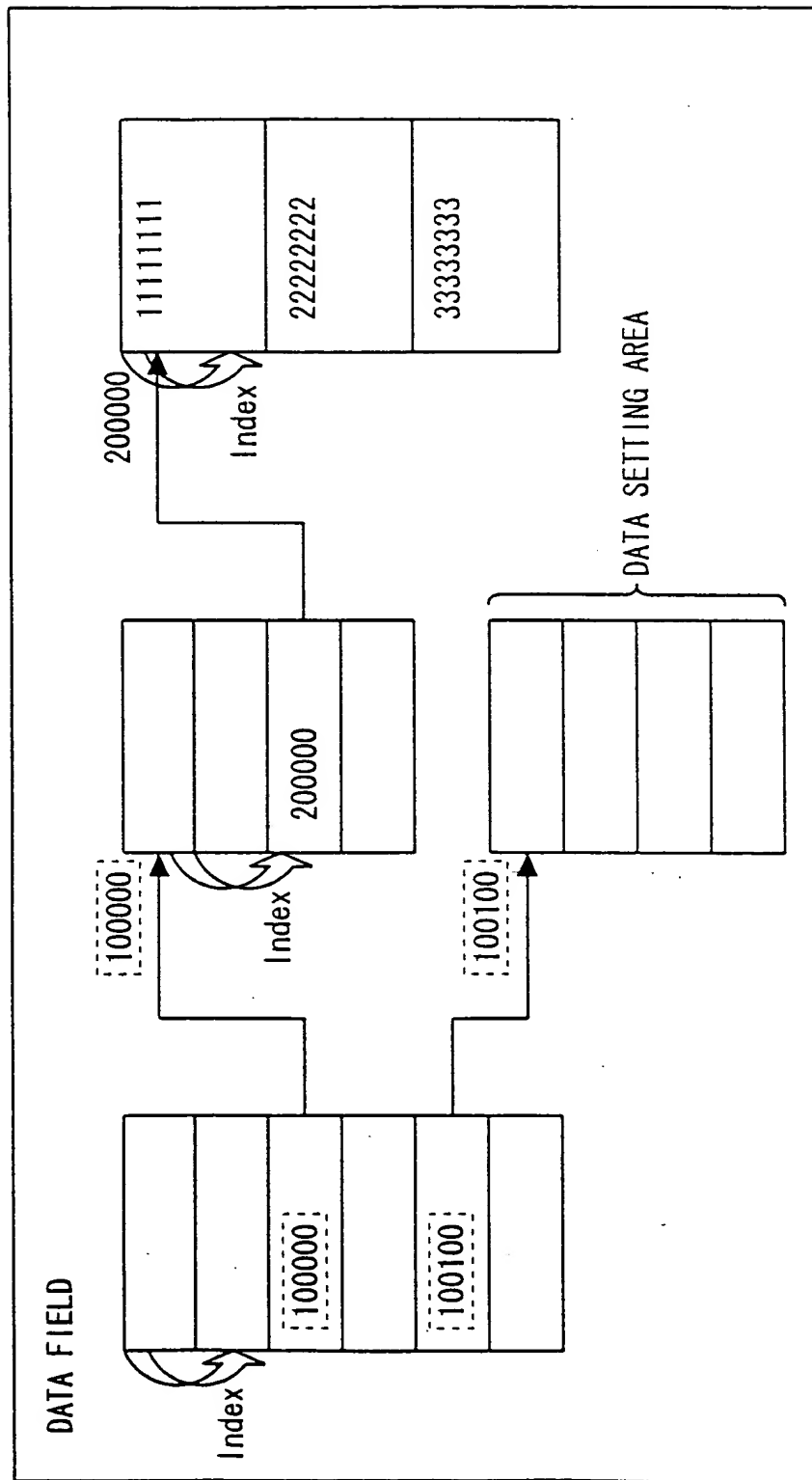


FIG. 20

PRIOR ART

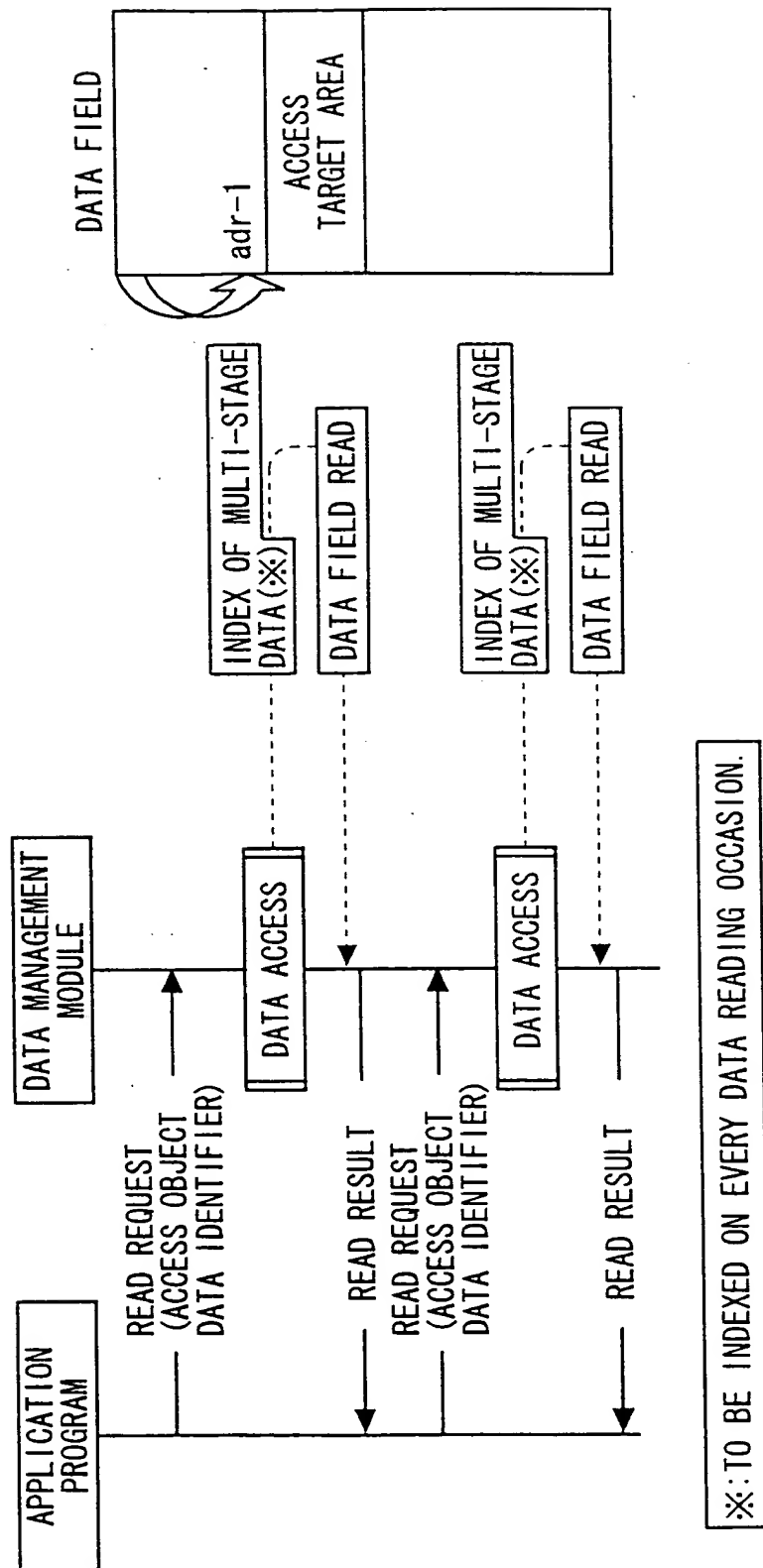


FIG. 21

PRIOR ART

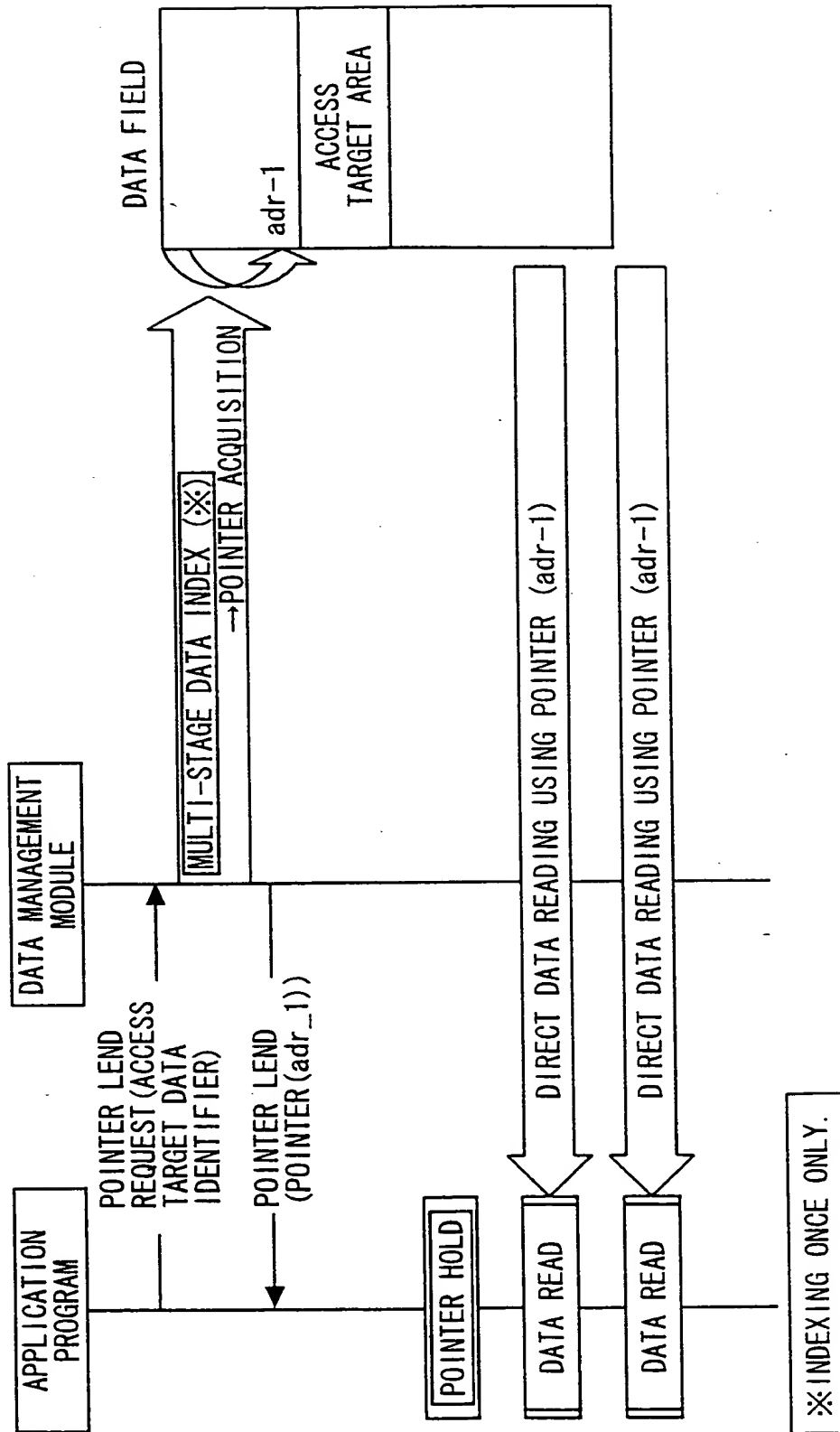


FIG. 22

PRIOR ART

